Fermilab

Cryogenics Dept. - MS #219
Wilson Hall 11th Floor - Ext. 4960

FILE COPY

November 13, 1986

TO: Bill Cooper - E706 Safety Chairman

FROM: Roman I. Dachniwskyj RID

SUBJECT: **Chimney Fire Test**

The chimney fire test will take place on Wednesday, November 19, at 9:00 a.m. at the fire station, weather permitting. The procedure which will be followed for the chimney test is given in Design Note ~~17~~ 21 which is included with this communication.

RID:lls

cc Safety Panel

B.Cooper - MS 357
S.Stoy
B.Scherr

Others

W.Baker
F.Lobkowicz
G.Fanourakis
K.Dixon
J.Ellermeier
J.Kilmer
B.Sanders
J.Urbin
T.Murphy
D.Burke

E706 DESIGN NOTE #21

TITLE: Chimney Test Procedure

AUTHOR: R. I. Dachniwskyj

DATE: November 13, 1986

OBJECTIVE: To outline the test procedure that will be followed during the chimney test of polyurethane foam.

a) Sample Dimensions - ~1 foot in height, ~5.875 in. outside diameter entire length and ~2.250 in. inside diameter hole that is concentric with the outside diameter and through the entire length.

b) Flame Source - A propane camp stove approximate size of burner element 3.250 in. outside diameter, inside flame diameter ~2.375 in.

Combustion Flame Temperature Data

Gas	*Temp of
Methane	3416
Propane	3497
ISO-Butane (chamber gas)	3450

*P 9-25, Chemical Engineers Handbook, Fifth Edition, Perry and Chilton

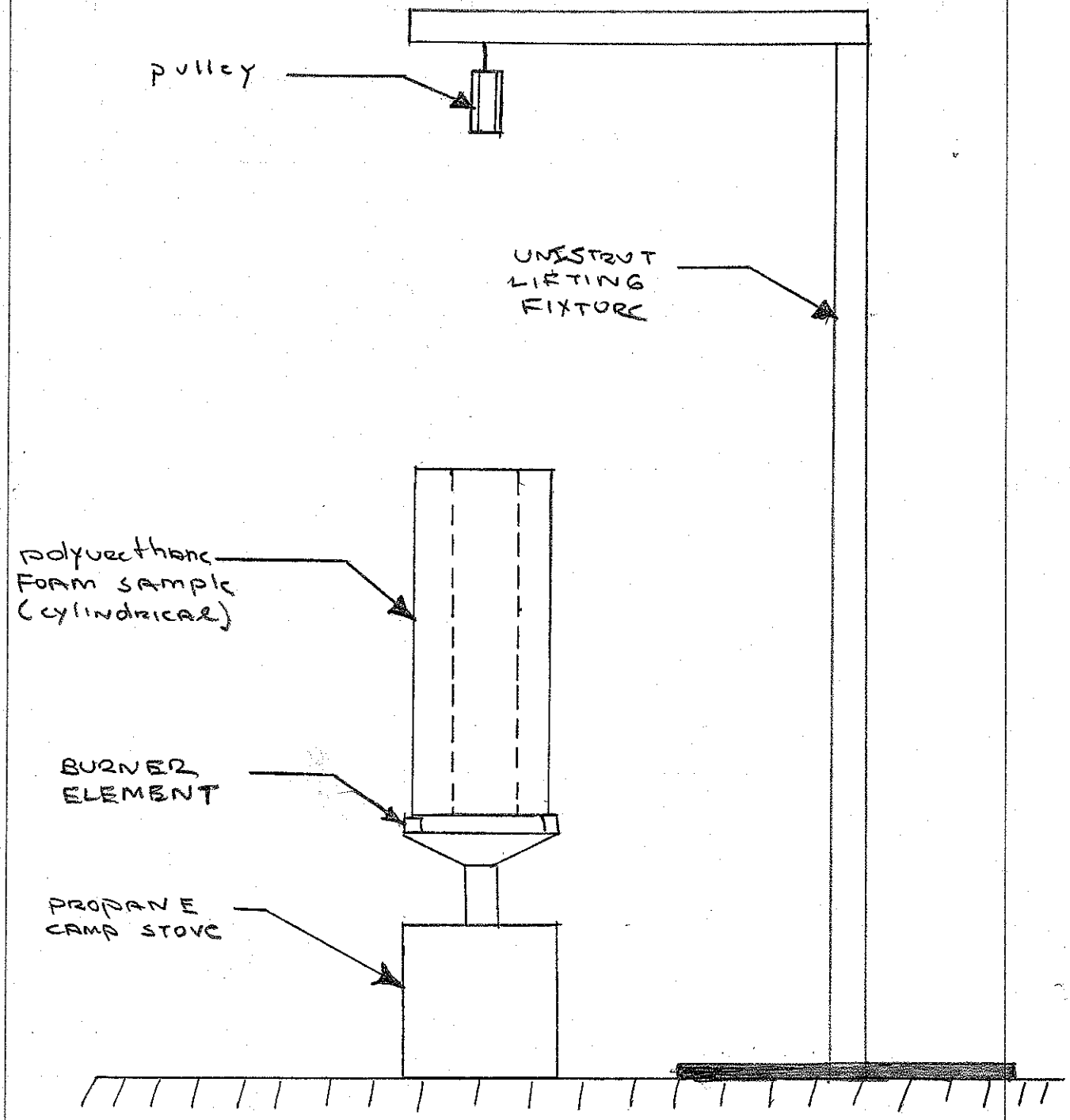

Fig. 1. CHIMNEY TEST FIXTURE

TEST PROCEDURE

1. Assemble burner.
2. Place burner on a stable firm base.
3. Push a stainless steel welding wire through the polyurethane foam specimen one inch below its top.
4. Place the polyurethane sample squarely on the burner.
5. Place a supporting structure (Figure 1) next to the burner and polyurethane foam sample.
6. Connect a metal wire to the stainless steel welding wire, thread it through the pulley which is attached to the supporting structure and run the wire some distance away from the burner.
7. Open the propane gas valve.
8. Light the propane camp stove using a long fireplace match and quickly walk away from the burner.
9. Raise the polyurethane sample away from the burner, once it catches on fire.
10. Once the foam stops smoldering, approach the test setup and turn off the propane camp stove.
11. Examine the polyurethane foam sample.

Reviewed by Robert Anderson Date 11-13-86

Project Engineer Fully Dyson Date 14 Nov 86